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1-1-2008

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### Recommended Citation

Vonganusith, V., & Jeremy, P. (2008). Web-based Courses to Support EFL Learning for Pre-service Teachers: A Thai Pilot Study. Retrieved from <https://ro.ecu.edu.au/ceducom/55>

EDU-COM 2008 International Conference. Sustainability in Higher Education: Directions for Change, Edith Cowan University, Perth Western Australia, 19-21 November 2008.  
This Conference Proceeding is posted at Research Online.  
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**Web-based Courses to Support EFL Learning for Pre-service Teachers: A Thai Pilot Study**

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## **ABSTRACT**

In a modern, information rich, economically driven society, Western universities as well as Thai Universities are turning towards the Web to disseminate and retrieve information. Integration of computers to support the learning environment in teaching language is still in its infancy in Thailand. Its implementation changes both the instructional strategy and also the teaching and learning environment.

English has been taught as a foreign language for over a century, and plays an important role at all levels of the Thai education system. At higher education levels, English skills are essential components of every pre-service teacher's professional education. In order to maximise opportunities for future teachers to develop their English skills, the teaching and learning of these skills has blended with the utilisation of ICT in many developed and developing countries.

This paper describes research that developed a computer-supported EFL course as a new learning model for EFL curricula and practice. The context for the study, was the development of a web based course to support pre-service teachers' professional knowledge and skills in English, set in a Rajabhat University in Thailand. Results from the multi-method approach used highlighted the possible contribution of ICT use in EFL classroom teaching and learning.

**Keywords:** Evaluation of a web-based course, Pedagogical strategy, Applications in EFL teaching and learning, Interactive EFL learning environment

## **INTRODUCTION**

This paper is based upon part of the work that forms a much larger doctoral study. It describes the development and evaluation of a pilot web-based course that was developed to be used as a tool to support English as a Foreign Language (EFL) teaching and learning for pre-service teachers in Rajabhat universities in Thailand. It is hoped that further development of this course will lead to a web-based English language training system that will provide an enhanced preparation pre-service teachers for learning effective language and computer skills.

As in all modern, information rich, economically driven societies, Thai Universities are turning towards ICT to disseminate and retrieve information (Bash, 2005; Chansilp, 2003; Neo, 2004; Shannon & Doube, 2004; Thongprasert, 2003). This includes the integration of computers into language teaching to support the language learning environment as an instructional strategy (Lo, Wang, & Yeh, 2004; Neo, 2004; Souza & Fardon, 2002; Tse-Kian, 2003; Wattanaboot, 2003). Thus

the traditional teacher-centred method of teaching has been modified and enhanced. The challenge is how to best facilitate effective teaching and learning as well as restructure curriculum to meet the rising demands of the knowledge based society that Thailand aims to become (Hepp, Hinojosa, & Laval, 2004, p. 299; MOE, 2007; ONEC, 1999; Ping, Swe, Hew, Wong, & Shanti, 2003; UNESCO, 2006).

Rajabhat Universities located around the country, are well positioned to cater to the educational requirements of a wide section of the population. One of the underlying philosophy of Rajabhat Universities is not only to promote the academic and professional status of teachers and educational personnel but also to apply advanced technologies to enhance instruction and improve efficiency. Until recently pre-service teachers in Rajabhat have had limited and basic computer experience. This experience has often been limited to performing fundamental tasks such as word processing (Wattanaboot, 2003). As many university students are now quite familiar with new technology, especially computer usage, it is appropriate that computer-based learning environments become practical in their application. Much research has shown that learners need to have “both a concrete and abstract knowledge of computers and need to be able to apply their knowledge to new systems and new situations with minimum retraining” (Winter, Chudoba, & Gutek, 1997). Thus, the needs of the university are to provide online courses that serve differing pedagogical approaches.

This paper describes a study that examined how a web-based course might be used as a tool to support English as a Foreign Language (EFL) teaching and learning for pre-service teachers in Rajabhat universities in Thailand. A further development of this web-based course will hopefully enable learners gain access to an increase range of online course for tertiary education students’ opportunities. It is also a web-based English language course to advance pre-service teachers’ preparation for effective language and computer skills for future teachers.

## **METHODOLOGY**

The aim of the study was to design and to evaluate a web-based course and determine its usefulness for pre-service teachers in Rajabhat Universities.

### **Design of the Pilot Course**

The pilot web-based course was intended not to be a separate system but more a “portal” into the university’s network. Thus the course contains background information from the universities existing computer-based environment. These include FAQs, basic computer knowledge, lesson plans and step by step self interactive computer-based lessons. These link up existing information structures, and so generate savings in the time and cost of information production. The information provided was designed to be relevant to university students and teachers of EFL, and also provides for easier accessibility for students both on and off campus. The course attempted to engage the students’ interest by organising and presenting the information in real life situations. The interface and contents are designed to be easily to use. The course intends to be fun and easy by not involving lengthy instruction without interaction. It also provides information via audiovisual means using the image and voice of a native speaker to help gain listening competence. Social activities and other interactive information help encourage more collaboration and cooperation at a recreational level. The graphic style and content used was targeted towards the age group (18-23 years old), as much as possible by using both in colour and content.





Figure 3: Screen of a Main Menu (Level 2)

The main menu screen (Figure 3) uses pictorial links to various sections of the course (A). There is “one-click” access to other sections available from a navigation bar at the top of each screen (Figure 3). Navigation bars are located at the top of each computer-based lesson environment course screen. The FAQ section (B) links to Course main menu (A) as well as University Main menu provides access to the main streams of information and is presented in a non-linear format (Figure 4). The information is divided into the framework of “who, why, what, where, when and how”. The contextual links are provided to navigate to appropriate content on the main menu. The users are also allowed to post and share their experiences and/or problems or other relevant information. These sections are provided to be available when needed to provide answers to questions, or to offer further contact advice. A further aim of these sections is to support communication within the learning community.

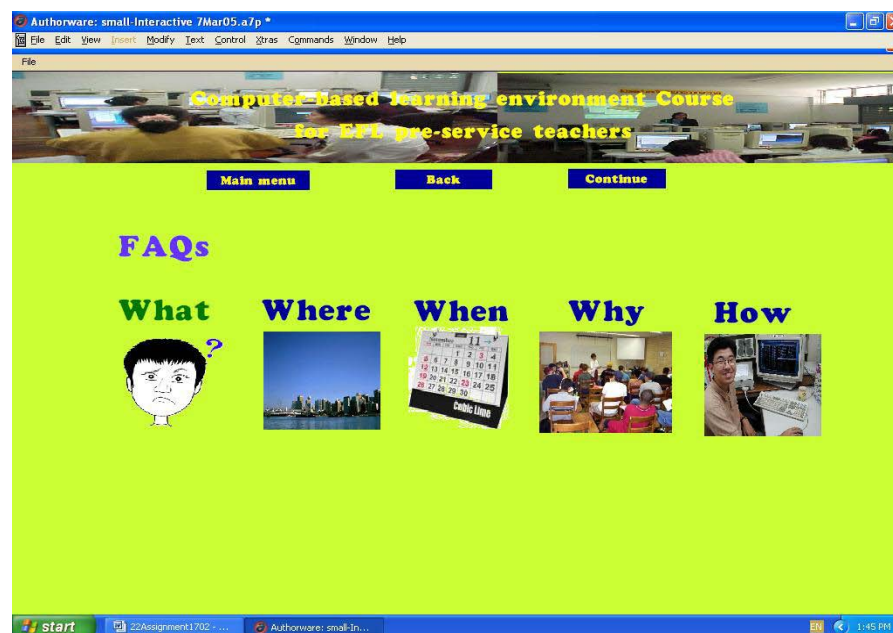


Figure 4: Frequently Asked Questions (FAQ) Section (Level 2)



The users access the ‘Introduction to basic computer’ section (D) to gain support with basic computer skills. The users then have a chance to learn how to navigate through audiovisual materials and content (Figure 5).



Figure 5: The Introduction to Computer Section

The following section is shown when you click on the Lesson Plan of computer-based learning environment course on Course Main menu (Level 2).

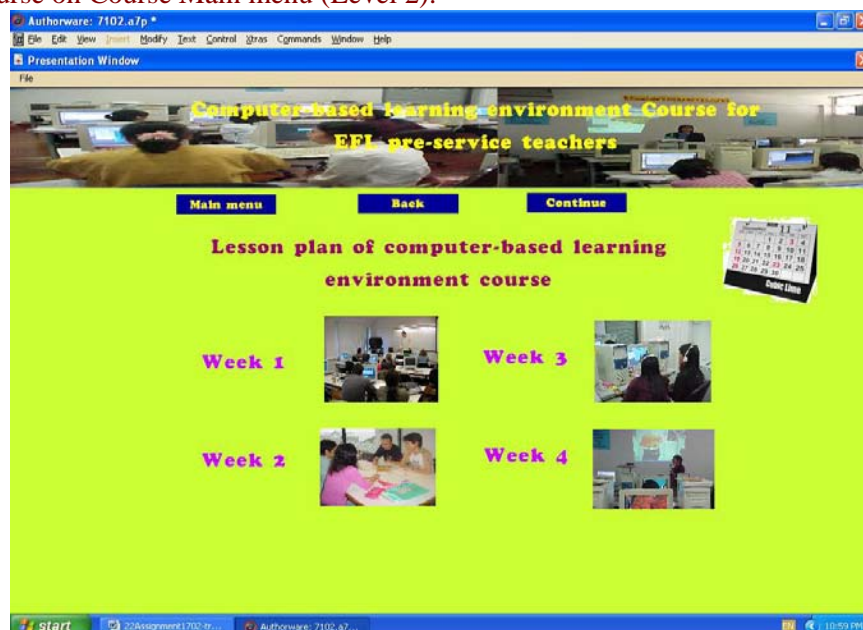


Figure 6: The Lesson Plan Section

Part of the intended EFL training methodology was to use a computer Authoring environment to allow the acquisition of English language skills within a realistic context. The environment chosen was Authorware, chosen because of its both language and iconic driven interface and its availability within many Rajabhat universities. Its intended application within the EFL training classroom is described below.

- The first week pre-service teachers will be informed about general basic computer use, including keyboards and general computer technical terms. Authorware function keys will also be presented. They will be allowed to practice using different function keys of Authorware step by step.
- The second week pre-service teachers will retrieve the chosen contents of prepositions of place, location, date and time. The storyboard will be written and share among group and pair work. The instructor and peers will give comments and feedback.
- The third week pre-service teachers will create and present their own work. They are allowed to observe and consulted their peers or instructor anytime.
- The final week, pre-service teachers will present their work and give comments and feedback about their peers' work. Then they will edit their work and package it onto a CD-ROM.

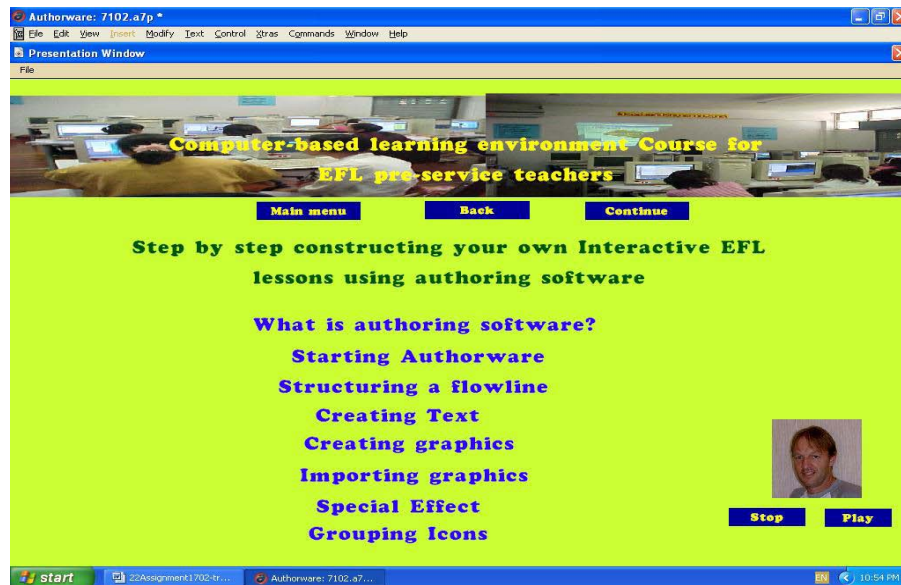
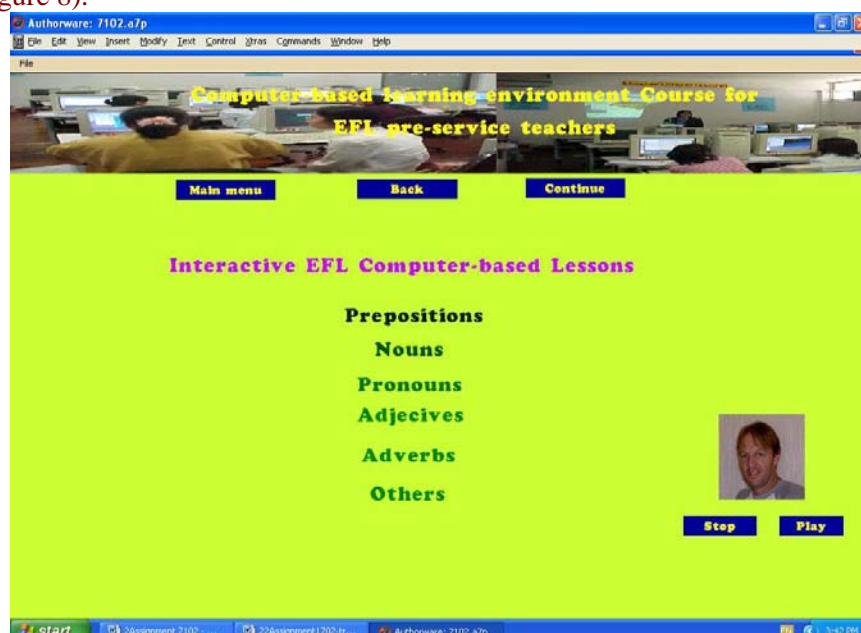


Figure 7: The Section of Step by Step Constructing the Users' Own Interactive EFL Lessons

Within a mouse click on the highlighted area (G) accesses to information about using authoring software (G). The audiovisual will inform how to use authoring software step by step (Figure 7). Within one click on Interactive computer-based Lessons (F) providing in grammatical section e.g. prepositions, the students learns and practising the sample of grammar structure concerning prepositions (Figure 8).



*Figure 8: The Section of Interactive EFL Computer-Based Lessons*

## **EVALUATION**

### **Instruments**

In order to formally evaluate the pilot course a set of internationally recognised software evaluation tools developed by Professor Thomas Reeves were used. Reeves' evaluation tools provide 20 criteria or pedagogical dimensions for evaluating the educational aspects of any software. The criteria include; the design of the interface, pedagogy philosophy and psychological theory, instructional sequencing, the role of errors and the teacher/trainer, learner control, and cooperative learning (Tom Reeves, 1997). In addition, Bates (2000) believes that seven factors need to be considered in evaluating the effectiveness of different instructional technologies: online course access and flexibility; cost; teaching and learning; interactivity and user friendliness; organisational issues; novelty; and speed. Further evaluation criteria relevant to courses and programs delivered in the World Wide Web. The considerations include class size, synchronous and asynchronous activities, instructor response time, ease of navigation, and opportunities to interact with peers and the instructor (Cyrs, 2001). In addition, a checklist of critical elements characterising effective learning environment in three man categories are offered to evaluate online course: (1) Pedagogies, the learning activities which underpin the unit; (2) Resources, the content and information which are provided for the learner; and (3) Delivery strategies, is associated with the ways in which the course is delivered to the learners (Herrington, Herrington, Oliver, & Willis, 2001). The evaluation strategy takes all of the above into account in providing recommendations for further development of the course.

In order to evaluate the development of the pilot web-based course that was designed to support EFL teaching and to evaluate its effectiveness, questionnaires were administered to experts, educators and students who had reviewed the course. The data obtained from responses concerning attributes of engagement and attraction were analysed. Questions (Likert scale based) sought the viewers' opinions and impressions towards the interface and content. The results are to help develop the online course.

The researchers used a set of internationally recognised software evaluation tools and constructs including:

- Professor Thomas Reeves' evaluation tools (T Reeves, 1997), provide criteria for evaluating the educational aspects of software. The criteria include; the design of the interface, and pedagogy Questionnaires with both open-ended and close-ended for teachers
- Questionnaire for administrators
- Questionnaire and Interviews for participating pre-service teachers

### **Participants**

The participants were administered to reflect on the course and examine whether the web-based course is useful for EFL teaching and learning. They were:

- Three educators
- 10 Pre-service teachers
- 10 EFL teachers
- Six Administrators

## **REFLECTIONS FROM REEVES' EVALUATION**

In this paper, the results from the questionnaire of three educators based on Reeves' Interface and Pedagogical Dimensions will be discussed along with the overall conclusions from the evaluation



process. In the Reeves' evaluation process, participants rated each criterion on a 5-point Likert scale from Strongly Disagree (1) to Strongly Agree (5). A rating identified the participants' opinion of the designed web-based course. The overall summary of these findings is discussed below.

## Interface Evaluation

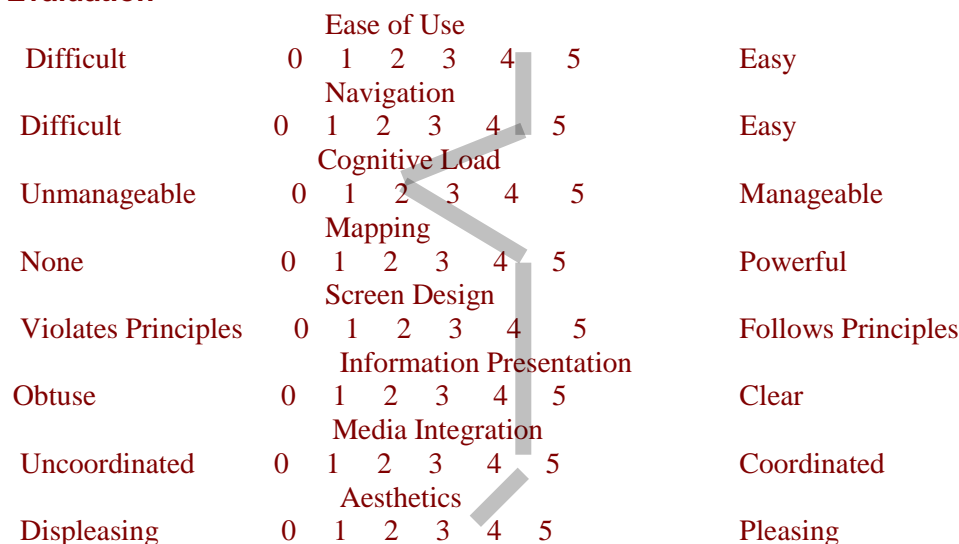


Figure 9: Interface Design Dimensions

This web site is easy to use as there are no complicated functions or navigation (M=5). The participants found that it is a strong feature of this web site. The links and formats support beginners as well as advanced users.

Navigation is linear so it is extremely easy to operate and know where the user is in the program and how to go to another section (M=5). The navigators appear on fixed areas on the screen. The information seems to be easily accessible. Some physical activities provided on the quizzes can be handled by the mouse pointer. The cognitive load of this web site seems easily manageable. The mean score (M=3) is ranked as medium.

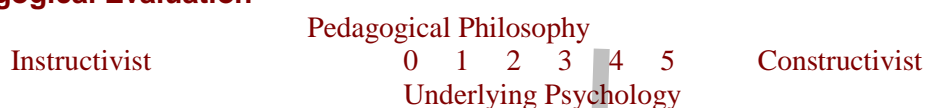
The web site provides a mapping system to track the information the user has accessed or interacted with. This web site is given the highest mean score for its powerful mapping function (M=5). Icons, graphics, colour and other visual designed in this web site are ranked with the highest score (M=5). The light green background of the screen is comfortable to the eyes. The animation provided in each page is enough to engage the intended audience.

Information in the web site is presented in a comprehensible form (M=5). The hyperlinks help the user learn and understand the information. The language used is simple for intended users. Some hyperlinks provided help to trace related information.

There is adequate media integration throughout the designed web. From the highest rated mean score (M=5) given it can be assumed that an audiovisual integral helps to attract and engage the intended learners.

The aesthetics is pleasing (M=4).

## Pedagogical Evaluation



Behaviour	0	1	2	3	4	5	Cognitive	
	Goal Orientation							
Sharply-focused	0	1	2	3	4	5	Unfocused	
	Experiential Value							
Abstract	0	1	2	3	4	5	Concrete	
	Role of Instructor							
Teacher-proof Materials		0	1	2	3	4	5	Egalitarian Facilitator
	Value of Errors							
Errorless Learning	0	1	2	3	4	5	Learning from Experience	
	Motivation							
Extrinsic	0	1	2	3	4	5	Intrinsic	
	Accommodation of Individual Differences							
Non-existent		0	1	2	3	4	5	Multi-faceted
	Learner Control							
Non-existent	0	1	2	3	4	5	Unrestricted	
	User Activity							
Mathemagenic	0	1	2	3	4	5	Generative	
	Cooperative Learning							
Unsupported	0	1	2	3	4	5	Integral	

Figure 10: Pedagogical Dimensions

This web site attempts to present comprehensive knowledge using a constructivist approach (M=4). In the interactive sections, for example, quizzes containing prompt feedback can be seen involving individual motivation, experience, and learning styles to construct knowledge.

The underlying psychology falls into behaviour learning theory and cognitive learning theory and constructivism (M=4). This web site supports behaviour learning theory in terms of responses, feedback and reinforcement. The website acts as a tutor presenting information. The user, then, is set to respond to questions provided at the end of a section. In addition, the set criteria will evaluate the user's responses. The learner also has multiple opportunities to practise and provide the correct answer.

Social interaction with others via discussion board also supports a cognitive development which is one of the key principles of constructivism. This web site allows learners to handle their learning themselves. 'Learning by doing' is central to constructivism in practice as well (M=5).

The web site allows learners to learn from their experience on the 'wrong' trial in quizzes' section (M=5). The learners may click on the responses randomly and feedback will be provided at the end of the quiz. This process encourages the user by providing a challenge to find the correct response. Limited teachers' and trainers' direction is required in this web site (M=5). However, if included in a classroom setting, it would provide cooperative learning or collaborative learning strategies with appropriate teacher guidance. Participants comment that some translation should be provided for EFL learners.

This web site fosters individual differences as the accessibility allows learners to achieve their own goal supporting different learning styles (M=5). This web site rates the highest mean score when measuring potential accommodation of individual differences.

This web site allows learners' freedom to direct their required contents by simple navigation (M=5). Contexts are useful and informative. The animations and audiovisual effects could contribute towards making the lessons more interesting, which in turn could assist in maintaining individual motivation and engagement.

The participants' gave a mean rating between 4 and 5 on a 5-point scale. Based on the ratings given, participants perceived the web site to be an effective instructional web-course. Overall the web site was perceived to be useful for teaching and learning how to construct an interactive English lesson. It is ranked in the highest mean score related to the target audience. However, the content should be adjusted to suit EFL learners. For example, there could be some translations included.

## **REFLECTIONS FROM THE QUESTIONNAIRE**

### **Teacher**

In order to ensure that the course materials would prepare EFL pre-service teachers for academic success and the future workplace, data about the course structure/content were collected from a survey of EFL teachers' opinions about the computer-supported EFL course. The results showed that overall, teachers' responses tended to be positive regarding the new computer-supported EFL course. Six of the EFL teachers responded in the survey that English teaching and learning through computer use is a critical priority. Five out of ten EFL teachers agreed that the course should be taught to improve students' English language skills for all enrolled students.

### **Administrators**

Data were collected from administrators who were based at six Rajabhat Universities. The survey showed that most administrators agreed that the course was an appropriate teaching and learning tool to support EFL learning. For example, most administrators agreed that the course engaged learners in skills and teaching strategy - collaborative learning areas. In addition, most administrators agreed that the course tends to transfer the traditional teaching approach to a learner-centred approach.

### **Pre-service teachers**

The pre-service teachers' opinions about the course structure/content were collected. The results showed that most EFL pre-service teachers agreed or strongly agreed with the statements. The overall results suggested that the pre-service teachers perceived that the course was an appropriate instructional support for English language and computer skills. The most important results for EFL pre-service teachers in Thailand are that the computer-EFL supported course is perceived to provide opportunity to develop English language skills and give good computer skills support.

## **RECOMMENDATIONS**

The researcher has a number of recommendations for further research includes these possibilities:  
The suggestion for future research is that the inclusion of examples of the actual interaction during the intervention can support further analysis of the data.

The introduction of a computer-supported EFL course should be taken into account for future research if the intervention is placed in a classroom setting, as some resistance to using computers might discourage learners' motivation and interest. Further to this, the students' and teachers' attitudes towards the use of computers in the classroom setting also need to be explored, evaluated and followed up to maintain their computer competence.

There were a number of limitations that need to be considered in interpreting the findings of this initiative study. A more comprehensive investigation including a large number participants and participants from other disciplines would contribute a better understanding. Further research would be essential to evaluate the effectiveness of the course.

## CONCLUSION

While based on the responses given, participants perceived the online learning system to be an effective instructional web-course; the development and evaluation process did reveal some issues that need to be taken into account in the design of the full online version. Some of these issues relate to access, to design and others to learning styles. Thailand has great variations of ICT and online access this means that students using any online learning system often have great variations in ICT skill levels. Also as bandwidth and internet access for students is very variable beyond campus boundaries the online course may only be effective when used on campus. Accommodating this diverse range of learners is imperative as courses move online. The researchers feel that with the move to online learning we have gained an incredible ability to give students a new way of learning that is very flexible but the use of such system still requires access to human teacher who can adapt to their students' needs. Thus the prototype has revealed the need to design the pedagogy as a complete system that includes the learner, the teacher, learner environment and the online learning system. It is hoped that by understanding the limitations of the current system, the designer can make the best use of limited resources available when advising upon the development of the full system, without alienating students or shutting them out by the use of resources too media rich to be viewed on the computers available. The materials can then be designed around the learners needs, rather than round the needs and limitations of the technology.

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